

# PATENT ABSTRACTS OF JAPAN

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## (54) DC ARC FURNACE

### (57)Abstract:

**PURPOSE:** To miniaturize a switch by a method wherein the switch is opened when the value of current, conducted through a rectifier, has been made smaller than a set value of the current by the phase control of a thyristor rectifier.

**CONSTITUTION:** When the opening of a switch 2 is necessitated, an operating switch 12 is closed, then, a changeover switch 11 is operated to provide a phase controller 9 with the small current setting value of a small current setter 10 and an ignition angle signal S, outputted by the phase controller 9, is shifted to the ignition angle signal corresponding to a small current value. According to this operation, current, conducted through a thyristor rectifier 3, is reduced to the small current value in a very short period of time and a comparing circuit 15 outputs when the current has become lower than the set current of a current setter 14, then, a current value judging circuit 13 outputs an opening operation commanding signal P and an opening operation mechanism 17 opens the switch 2. Accordingly, the current of the switch 2 upon the opening operation of the same is lower than the set value of the current setter 14 whereby the switch may be opened by a current, far smaller than the value of arc current during operation effected by an arc current setter 8.

